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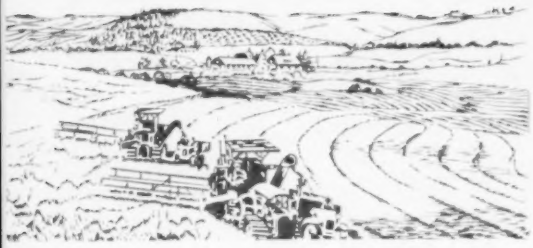

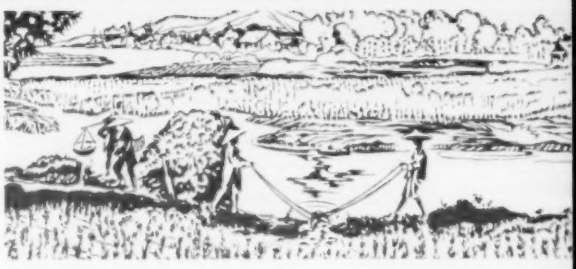

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CONTENTS FOR APRIL, 1957

The Farm Adoption Scheme. By John Fraser Hart 153

Dr. Hart is Assistant Professor and Acting Chairman of the Geography Department at Indiana University. He did field work on recent changes in British agriculture during the summer of 1956 with the assistance of grants from the Social Science Research Council, the Association of American Geographers, and Indiana University.

Geography and Planning: An Example from Cleveland, Ohio. By Alexander Melamid 161

Dr. Melamid is Assistant Professor of Economic and Political Geography in the New School for Social Research, New York. He is a frequent contributor to the *Geographical Review* and *Economic Geography*. During the coming summer he will conduct a study of economic development in Iran.

A Brief History of Trained African Elephants in the Belgian Congo. By Charles F. Bennett, Jr. 168

Mr. Bennett at present is working toward a doctor's degree at the University of California at Los Angeles. His special field of interest is animal geography, especially the economic aspects of that field.

Financial Aid for a Geographic Education. By Elizabeth Eiselen 172

Dr. Eiselen is Chairman of the Department of Geography, Wellesley College and a frequent contributor to the *Journal of Geography* and to *Economic Geography*.

The Vital Role and Scope of Geography. By Grace E. Koerner 177

Miss Koerner is an instructor in geography at Fairleigh Dickinson College, Rutherford, New Jersey.

Experiences with Integration in the Junior High School. By Kathryn G. Scott 181

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Experience with Integration in the Intermediate Grades. By Margaret F. Abel 184

Miss Abel is a teacher in the intermediate grades of the Lanning School, Trenton, New Jersey.

Conservation in New Hampshire. By Ella O. Keene 187

Miss Keene is Assistant Professor of Geography, Keene Teachers College, Keene, New Hampshire.

The National Council at Work. By Herbert Gross 191

Editorial Notes and News 192

Contents of the JOURNAL are indexed regularly in the *Educational Index to Periodicals*.

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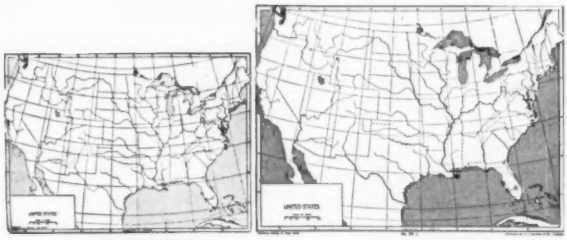

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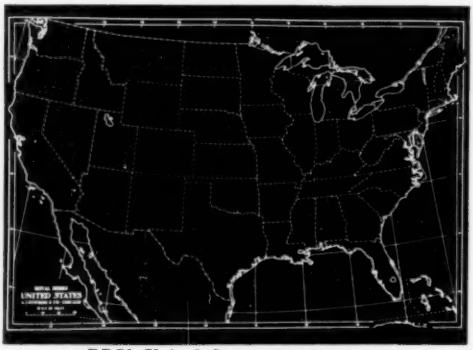

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THE FARM ADOPTION SCHEME*

JOHN FRASER HART
Indiana University

In 1800 nineteen of every twenty Americans lived in rural territory. By 1900 the ratio had dropped to six of every ten, and by 1950 to only two in five. Furthermore, in 1950 less than one of every five Americans lived on a farm. This poses a real problem for the geography teacher, who recognizes that the boy or girl from a farm home commonly has a better "feel for country" than the city-bred student.

The problem is rather more critical in Britain, where less than one person in fifteen is a countryman. The townsman's lack of understanding of rural matters has often relegated British agriculture to Cinderella status in matters political and economic. The National Farmers Union has long been conscious of this problem, and is constantly trying to bridge the gap between town and country. In recent years, however, the Union has tended to become more a political pressure group and less a source of agricultural education and information. A new organization was required.

In 1947 a group interested in the British countryside founded the Association of Agriculture. This nonpartisan, nonpolitical, organization seeks to educate the townsman about the country and to improve urban understanding and appreciation of the role agriculture plays in building and maintaining national prosperity. One of the Association's major activities, the *Farm Adoption Scheme,* is of considerable interest and value to the teacher of geography anywhere.

* The author wishes to express his very great appreciation to Miss Joan Bostock of the Association of Agriculture, both for providing much of the information contained herein and for giving permission to use the data contained in the Association's farm folders.

THE SCHEME

The Farm Adoption Scheme has been strongly influenced by the "ship adoption" which has been so successful in many British schools. A class will "adopt" a ship, trace its movements from port to port, learn what cargo it carries, and thus achieve a better comprehension of Britain's maritime trade. The use of a concrete example provides a useful pedagogic device for illustrating general principles, and in addition, is quite effective in arousing student interest.

An interest in similar "farm adoption," which has long existed in Britain, became greatly increased after the Second World War. Widespread arrangements were made for contacts between the National Farmer's Union, educational authorities, and individual farmers and teachers. A school or class could "adopt" a local farm, which groups of students were encouraged to visit. Altho this informal local arrangement still continues, it has limitations for many urban schools due to problems of transport, proximity and availability of farms, and other obvious difficulties. Some teachers have also concluded that the full value of farm adoption could only be realized when students could compare their own "adopted" farms with those in other areas.

In consequence of these problems, the Association of Agriculture has devised a unique scheme of farm adoption by mail. It has carefully selected eight farms which are representative of the wide regional variations in British agriculture. These are fulltime commercial farms, not the showplaces of gentleman farmers. The money invested in each farm has come from the farm itself, and the farms are respected in their local communities as progressive operations representative of the best trends in the farming of the region. The families have worked hard on the land, and the farmers themselves are above the average.

The Association of Agriculture has prepared a legal-size folder of detailed information on each farm, its operations, and its environment, relating these sample studies to the larger regional patterns of which they are a part. These well-written farm folders can be of considerable value to the American teacher, at whatever level, who is presenting the geography of Britain to his class. Several possibilities suggest themselves. A single farm might be used for intensive class study, and the teacher can compare this farm with others in Britain by reference to the other folders; folders on the other farms might be kept in the school library for student

use. Or the class might be divided into groups, with one farm assigned to each group for a report to the class. The usefulness of the farm material on Britain is greatly enhanced by the fact that the Association has prepared comparable material on four farms in Canada, two in New Zealand, and hopes soon to add farms both in Australia and in South Africa.

In addition to the farm folder, which is described in detail below, a series of filmstrips have been prepared to illustrate life and activities on the eight British farms. Two farms are combined on each filmstrip, with fifteen photographs of each farm and a comprehensive booklet of teaching notes. Furthermore, the Association of Agriculture has prepared a generalized map of farming types in Britain which makes a useful companionpiece to the farm folders and filmstrips.

The farm folders are available from the Association of Agriculture (53 Victoria St., London, S. W. 1, England) at a price of $1.50 each, including postage. The folders for Commonwealth farms (Canada and New Zealand) cost $2.75 each. For an additional sixty-five cents each one is provided with supplementary letters, written at intervals of about four months for a period of two years, which provide an interesting insight into the effects of weather, economics, and politics on farm planning and operations. The map of types of farming areas is also available from the Association at a price of $1.50. Filmstrips must be ordered from the Educational Supply Association (181 High Holborn, London, W. C. 1, England) at a price of $2.75 each.

The heart of the Farm Adoption Scheme, of course, is the farm folder, which presents the complete story of each farm, its physical setting, its layout, and its plan of operations. Each folder contains the following information: a general introduction; a location map; a photograph or photographs of the farm (Fig. 1); a field plan with an inset plan of the farmstead (Fig. 2); a list of the various fields, with their names and acreages; description of the soil, cropping practices, livestock operation, buildings, water supply, labor force, implements, and machinery; and an interesting discussion of the local background and history of the area in which the farm is located.

The British Farms

The amount of information available in the folders is only partly indicated in Tables I and II. Table I shows the acreage devoted to various uses on each farm, as well as the striking varia-

FIG. 1. General view of Holmfield, showing the farmstead in the foreground and the relatively large field size. Similar photographs of each farm are included in the other farm folders.

tion in average field size from farm to farm. Table II shows the numbers of various kinds of livestock, tractors, and the labor force. The breeding stock are shown separately from the fattening stock, which are known in Britain as "stores." There is a noteworthy distinction between the rearing farms, which maintain herds of cows or flocks of sheep for breeding purposes, and the feeding farms, which fatten the "store" animals.

Pickhill Farm, Tenterden, Kent, is a fruit and hop farm in the Weald near London. Most of the farm land is used for orchards or hop gardens, but there is a bit of cropland to produce feed and straw for cattle kept to produce barnyard manure. This manure is considered a necessity for newly planted orchards. A flock of sheep grazes the grass under the orchard trees. The large number of casual workers are employed only in the hop picking season, when large numbers of people from the poorer quarters of London migrate to Kent for a hop-picking holiday.

Weston Farm, Clun, Shropshire, is a typical livestock rearing farm in the uplands along the Welsh Borders. A large part of the farm is more than a thousand feet above sea level, with consequent difficulties of cropping. Much of it was permanent grassland before the Second World War, but wartime plowing and re-seeding of old pastures has notably increased the productivity of the farm. Calves

TABLE I

Land Use on the Eight British Farms of the Farm Adoption Scheme, in Acres

Name of farm	Average Field Size	Total	Cropland	Grassland Rotation	Grassland Permanent	Rough Grazings	Orchards	Woodland
Pickhill Farm	6.5	201	18	17	20	—	141	5
Weston Farm	7.2	387	121	222	40	—	—	4
Westmill	18.3	273	103	36	111	7	—	15
Stepstones Farm	8.7	227	54	161	12	—	—	—
Holmfield	28.9	405	254	104	47	—	—	—
Gilfach Chwyth	3.4	67	26	35	6	—	—	—
Cransley Grange	13.2	361	187	88	80	—	—	6
Lienassie	6.8	787	24	92	31	640	—	—

from the breeding herd are kept on the farm for about two years, and then sold for fattening to farmers on lower, kindlier land. The majority of the lambs are fattened on the farm. The farm labor force actually consists of the farmer's five sons.

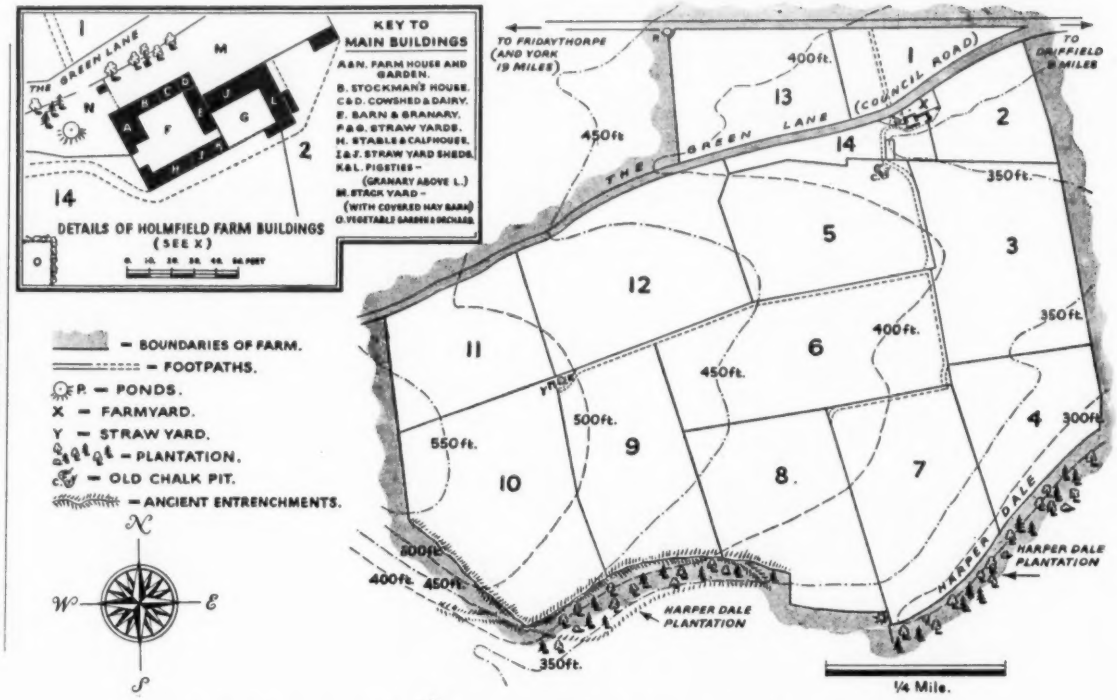
Westmill, Inchture, Perthshire, is a cropping and feeding farm in the Carse of Gowrie in eastern Scotland. The arable half of the farm produces such cash crops as wheat, sugar beets, and potatoes for seed or the early market. Oats, hay, and fodder roots provide winter feed for cattle which are bought as stores, primarily from Ireland. The permanent pastures carry about one store beast per acre. Lambs are also bought for fattening on the farm, and there is also a small flock of breeding ewes. The large number of casual workers are mainly local schoolchildren recruited for the ten days of potato harvest.

TABLE II

Stock, Mechanization, and Labor on the Eight British Farms of the Farm Adoption Scheme

Farm	Cattle			Sheep		Horses	Tractors	Farm Workers	
	Cows	Followers	Store†	Ewes	Store†			Regular	Casual
Pickhill Farm	—	—	11	170	—	1	4*	11	300
Weston Farm	35	70	—	280	—	2	3*	5	—
Westmill	—	—	97	37	180	2	2	4	26
Stepstones Farm	120	60	—	—	100	—	3	7	—
Holmfield	14	—	—	97	170	1	4	6	—
Gilfach Chwyth	29	19	—	15	—	—	2	1	—
Cransley Grange	35	100	—	—	450	3	3*	12	—
Lienassie	20	40	—	500	—	—	2	2	—

† Lean animals bred elsewhere bought for fattening on the farm
* Includes one crawler tractor.



FARM ADOPTION SCHEME
FARM No. 5 HOLMFIELD, FRIDAYTHORPE, EAST RIDING OF YORKSHIRE SHEET 3
Information from: The Associates of Agriculture, 33 Victoria Street, London, S.W.1

Fig. 2. Field layout of Holmfield, with a plan of the farmstead in the upper corner. This is a representative sample of the farm plans contained in each farm folder.

Stepstones Farm, Langford, Somerset, is a West Country farm devoted entirely to milk production. All the farm land is used to produce feed for the dairy herd, but the farmer must buy additional feed in winter. Two and a half miles of old hedges were bulldozed out during the Second World War, and the fields were enlarged from an average of about five acres to their present size. Grazing is controlled by electric fences. The cattle have to be brought indoors in late November because the land becomes too wet for heavy animals, and lambs are brought in to fatten on the remaining grass.

Holmfield, Fridaythorpe, East Riding of Yorkshire is a mixed farm in the traditional sheep and barley country of the Yorkshire Wolds (Fig. 1). Sheep do well on the thin dry Chalk soil, which is also well suited to barley production. The large fields are adapted to mechanized arable farming on a modified four-course rotation (Fig. 2). Barley and wheat are sold off the farm, while the tail grain and straw are fed in yards to the dairy cattle which produce essential barnyard manure. In addition to fattening all his own lambs, the farmer buys in sizeable numbers of store lambs for fattening each fall.

Gilfach Chwyth, Horeb, Llandyssul, Cardiganshire, is a small mixed farm in West Wales. Grassland milk production has always been important, and a war-induced increase in crop production has made the farmer virtually independent of the supplementary feed he formerly bought each winter. The fields are purposely kept small to permit better control of the grazing stock, and are divided by tall hedges on earthen banks. All heifer calves are reared as herd replacements, but the bull calves are sold at an age of two weeks. In addition to a small flock of sheep, both pigs and poultry are kept as farm scavengers.

Cransley Grange, Broughton, nr. Kettering, Northamptonshire, is a milk and beef farm which formerly concentrated on breeding store cattle and sheep and on producing cash crops of wheat and barley. The basis of the farm operation is now a dairy herd of dual purpose Red Poll cattle; the calves not required for herd replacement are fattened on the farm and sold for slaughter at three years. Breeding sheep are no longer kept on the farm, but large numbers of lambs are bought each fall and fattened on the crop residues. Sugar beets and potatoes have been introduced as cash crops in recent years, altho wheat and barley are still important.

Lienassie, Kintail, Ross and Cromarty, is a small hill sheep farm in the western Highlands of Scotland. Most of the farm land is steep and hilly, unimproved rough grazing land on which the flock of hardy breeding ewes remains thruout the year. The lambs are all sold as stores in the fall, as none of them can be fattened on the farm and there is barely enough grazing to keep the breeding ewes alive in winter. Cattle are grazed in the summer to keep down the rougher pasture growth, but in winter they are brought into sheds and fed the produce of a small acreage of improved valley land. The calves are all sold as stores.

The Commonwealth Farms

In addition to the eight farms in Britain, the Association of Agriculture has prepared farm folders on two farms in New Zealand and four in Canada. One of the New Zealand farms is a dairy farm in the Waikato, one of the principal dairying districts of the North Island. A herd of about 90 cows are kept on the 126 acre farm. Fluid milk is delivered to the local cheese factory, whence cheese is exported to Britain.

The other example from New Zealand is a 700 acre fat lamb farm in North Canterbury on the northern edge of the Canterbury Plain. Almost a third of the farm is in native tussock grass. The Corriedale sheep, noted for their high class wool, are crossed with Southdown rams to produce the famous Canterbury fat lamb.

The Canadian farms selected by the Association of Agriculture are in the provinces of Nova Scotia, Quebec, Ontario, and Manitoba. The Nova Scotia farm of 270 acres is near Kentville at the northern end of the Annapolis Valley. The farm has a number of apple and pear orchards, but there is an increasing emphasis on diversification with more crop and pasture land, a dairy herd, and a very large poultry flock.

The farm in Quebec was selected to reflect the ancient traditions and customs of French Canada. It is a family holding of 260 arpents on the flat alluvial St. Lawrence lowland southwest of Montreal. The primary concern of the farmer is fluid milk production. Altho the ancient customs still flavor the farm, it is highly mechanized and progressive, with a fine herd of pure-bred Holsteins.

A mixed farm of 315 acres was selected as typical of the Ontario Peninsula. The farmer produces registered seed grain and

seed potatoes on his crop land. His livestock operation is specialized in production of pedigree Beef Shorthorn cattle, Yorkshire pigs, and Suffolk sheep.

The fourth Canadian farm is located on the Portage Plains about sixty miles west of Winnipeg, and is strictly a cash grain operation. Spring wheat has been produced on the farm for some years, and just recently the farmer has begun to concentrate on the production of seed wheat, which is sold both in Canada and in the United States.

GEOGRAPHY AND PLANNING: AN EXAMPLE FROM CLEVELAND, OHIO

ALEXANDER MELAMID
The Graduate Faculty of Political and Social Science, New York, New York

In recent years geographers have cooperated frequently with economists, engineers, and architects in the preparation of long-term development plans for cities, regions, or states. An instructive example of the scope of these contributions is contained in the recommendations for the development of the port of Cleveland, Ohio. New port and ancillary facilities will be required there to handle the expected traffic volume, after the opening of the St. Lawrence Seaway early in 1959.

HINTERLAND DEFINITION

To prepare these plans the volume and character of Cleveland's future port traffic first had to be estimated. For this purpose the hinterland of Cleveland for ocean shipment had to be geographically defined based on a county by county railroad freight-rate analysis. Counties were considered part of the Cleveland hinterland if railroad freight-rates to and from the county seat or nearest railroad station, were lower than the rates to other Great Lakes ports, or lower than rail or rail-barge export rates from these points to Atlantic or Gulf coast ports. A fringe area of counties where rail rates to Cleveland are 10 per cent higher than to other ports was also defined. Truck rates generally follow railroad charges, and the hinterland and its fringe would not differ

significantly if trucking rates had also been considered. Exports thru Atlantic or Gulf coast ports travel at special rates lower than the charges for equivalent shipments thru Great Lakes ports. This discrimination may be removed with the opening of the Seaway; however, there is no assurance of such a change. For all these rea-

After, *Port of Cleveland, Ohio: Guide Plan for Waterfront Development*, prepared by James C. Buckley, Inc.

sons the definition of the hinterland and fringe was based on existing railroad freight rates as shown in Fig. 1. Within this hinterland and the fringe one-thousand five-hundred manufacturers and shippers were interviewed regarding their present and future ocean shipments thru Cleveland. A geographical analysis thus was made the basis for a traffic enquiry. The results of this enquiry were

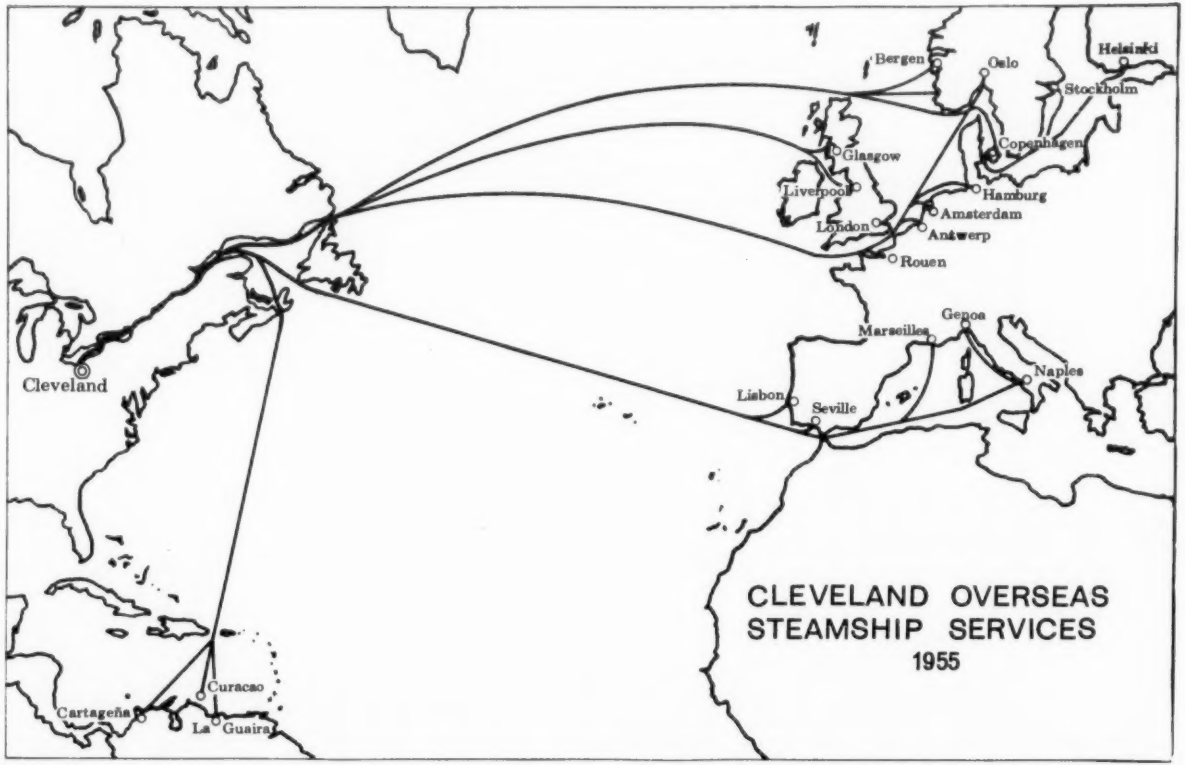
correlated with a geographical analysis of the existing ocean shipping services from Cleveland.

Shipping Analysis

Direct shipping connections thru the shallow St. Lawrence canals to overseas destinations were first established in 1933. The services were interrupted during World War II; however, since 1945 both the number of vessels calling at Cleveland and the tonnage handled have increased continuously. In 1955 Cleveland had direct connections to the ports shown in Fig. 2. This traffic moved almost entirely in small separate lots of so-called general cargo to countries contributing 26 per cent of the total United States overseas trade. Analysis of the trade of countries not connected by direct shipping lines to Cleveland disclosed that their trade with the United States moves predominantly in bulk loads or shiploads, rather than in general cargo lots. Bulk shipment is much more economical in large vessels than small ones. This explains the recent growth of specialized bulk cargo vessels of up to eighty thousand tons, like supertankers or super-orecarriers. The present depth (14′) of the St. Lawrence canals has been a most serious obstacle to establishing of shipping connections with countries not so far served from Cleveland. The larger ships which will be able to travel on the Seaway (27′ deep) will permit quite different forms of shipping services to new geographical destinations. Forecasts based on existing conditions are therefore almost impossible to make. Ocean freight rates, in particular, cannot be forecast; however in view of the distances involved, it seems likely that Great Lakes freight rates to overseas ports will be equalized with rates from East and Gulf coast ports.

Location Analysis

Shipping services to new destinations and significant increases in bulk shipments will attract new industries to the city of Cleveland and encourage the expansion of existing industries. In turn this industrial growth will have favorable repercussions on the port traffic of Cleveland. For this reason railroad and ocean freight rates for all major industries were evaluated and their location significance compared with current trends in the geographical distribution of these industries. Also, the size of the market in Cleveland and elsewhere in the United States for the products of these



After, *Port of Cleveland, Ohio: Guide Plan for Waterfront Development*, prepared by James C. Buckley, Inc.

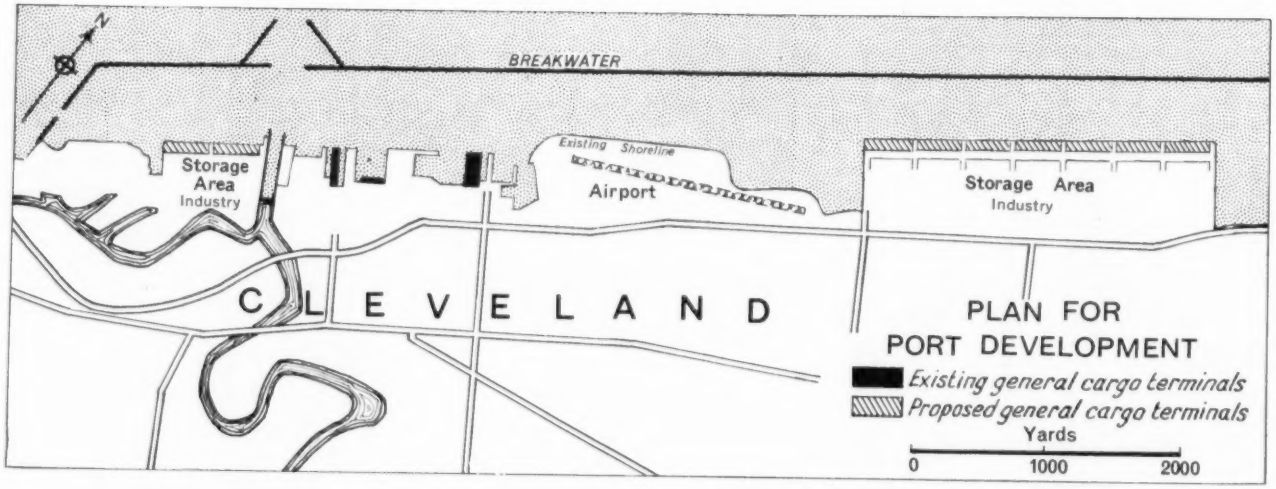
industries was considered. Since Cleveland can supply labor and all other services on a competitive basis with other American cities, this geographical analysis was held to be decisive in forecasting industrial growth in Cleveland. The investigation also disclosed that there are not sufficient sites for new industries, available in Cleveland. All plants requiring large acreages, like steel or heavy chemicals, therefore have to locate outside the city. Estimates of the maritime traffic of the industries expected to locate in Cleveland, e.g. grain-mills, sugar refineries, lumber processors, coffee roasters, etc., were combined with the information obtained from the inland traffic and shipping enquiry. The following estimate of total port traffic thus resulted:

ESTIMATED CLEVELAND SEAWAY TRAFFIC
(Short Tons)

Commodity or Commodity Group	1959	1965	1970
Coal and Coke	120,000	200,000	300,000
Grain	500,000	750,000	1,000,000
Ore			
Iron	1,000,000	1,500,000	2,000,000
Other	75,000	115,000	150,000
Sub-total	1,075,000	1,615,000	2,150,000
Petroleum & Products	25,000	30,000	35,000
Woodpulp & Pulp Wood	50,000	75,000	100,000
General Cargo	800,000	1,000,000	1,100,000
Total	2,570,000	3,670,000	4,685,000

SITE PLANNING

According to the above estimates Cleveland will obtain about 9 per cent of the expected total volume of Seaway traffic. To handle this traffic the construction of at least eight new cargo berths with adjacent warehouses and industrial land was recommended. A grain terminal with an additional one or two cargo berths, will also be required. However, the existing coal- ore- and oil-terminal facilities are expected to suffice for the future volume of traffic. The construction of the new facilities will involve several changes in the geography of the waterfront (see Fig. 3). A portion of the foreshore area behind the existing breakwater will have to be filled in. About seventy-five acres of land suitable for waterfront indus-



After, *Port of Cleveland, Ohio: Guide Plan for Waterfront Development*, prepared by James C. Buckley, Inc.

tries can be obtained by filling-in up to a distance of two thousand feet from the breakwater. Studies of industrial sites elsewhere show that about four to six acres should be set aside for a grain elevator and mill, ten to twenty acres for a sugar refinery and packing plant, and about ten acres for a lumber yard. An additional hundred and twenty-five acres of industrial land can be obtained by filling in up to one-thousand three-hundred feet from the breakwater. Another five hundred acres could be provided by condemning an adjoining area of slum dwellings. This recommended port and industrial development involves the relocation of an existing small boat harbor, as well as a reduction in the size of planned waterfront recreation areas. In addition the layout of the downtown airport, which caters only to small business and private planes would have to be changed by reducing the length or number of runways. The construction of a foreign trade center to accommodate consulates, shipping offices, etc., geographically close to the port and the existing central business district, was also recommended.

Conclusions

This port development was estimated to cost about twenty-three million dollars in 1955. In November 1955 expenditures of six million dollars were approved for this purpose by the voters of Cleveland. Public expenditure of large sums of money to take advantage of new means of transportation is not new in the history of Cleveland. Comparable sums were disbursed to attract both the Ohio canal and the first railroad. These were responsible for the city's phenomenal growth in the early and middle nineteenth century, when Cleveland outgrew its rivals, as for example, Lorain, Ohio. Similar public investment in new means of transportation, to take advantage of the St. Lawrence Seaway, can be expected to have a comparable effect on the economy of Cleveland today. Thus the past, present, and future economic geography of Cleveland is primarily the result of deliberate communal effort. In view of the close relation between geography, planning, and economic growth, geographers can make significant contributions in the preparation and formulation of plans of this nature.

A BRIEF HISTORY OF TRAINED AFRICAN ELEPHANTS IN THE BELGIAN CONGO

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It is not generally known among American geographers that African elephants have been trained for use as beasts of burden in the Belgian Congo. It seems to be generally believed that the African elephant is too wild and intractable a beast to be suited for taming and training such as has been done with its Asian relative. At least one recent American college textbook of geography makes the statement that the African elephant cannot be tamed because of its fierce qualities.

This error is undoubtedly due in large part to the numerous published accounts of big game hunters which contain statements emphasizing the dangerous aspects of this great beast. Because these writings are both numerous and accessible they have tended to overshadow less available writings which have dealt in varying length with the matter of training African elephants in the Belgian Congo.

It is for the purpose of correcting this widely held misunderstanding, and to make available to teachers certain general facts relating to trained African elephants, that this article has been written.

Classification and Geographic Range

The African elephant belongs to the mammalian order *Proboscidea* which also includes the Indian elephant. The elephants inhabiting Africa are included together in a single genus, *Loxodonta*. Within this genus are several different species, but the people who specialize in mammalian classification have not generally agreed upon the characteristics which make one species of African elephant differ from another. The most recent authoritative statement on this matter classifies the elephant of the Congo rainforests as follows: forest elephant *Loxodonta cyclotis*. There are of course other species of African elephants but their classification does not come within the treatment of this article. It should perhaps be pointed out that some authors refer to the species inhabiting the Congo rainforest as the Pigmy Elephant and give to it a different

scientific name. In this paper it shall, however, be referred to as the forest elephant or simply as the African elephant.

The geographic range of the forest elephant can only be approximated at this time due to the fact that there is a certain paucity of data relating to this matter. According to one recent authority, the forest elephant inhabits the rainforest area on the west coast of Africa, thence thru a narrow forest belt across Liberia to the Cameroons, and perhaps as far south as northern Angola. From this belt it ranges eastward in the remaining areas of tropical forest in the Congo basin.

Biology

There are a few basic biological facts relating to the elephant which should be kept in mind. The great size of elephants requires that they spend a rather large part of their waking hours in the search for food. The amount of food that an elephant needs depends upon many things and there is considerable difference in the food requirements of the Indian species and the forest elephant, the latter requiring the greater amount. A trained forest elephant in the Belgian Congo weighing in the neighborhood of two and one-half tons will, at the evening meal, consume 47 pounds of fresh young tree leaves, 800 pounds of small branches, 30 to 40 pounds of green fodder, 5 to 7 pounds of manioc, sweet potatoes, bananas, ground manioc and rice. One can readily see that even a small herd of trained elephants presents a rather formidable food problem for its owner. During the day the elephants pick up what food they can as they work, and they are put out to pasture just as is any other kind of livestock, with the difference being in that they are watched very closely at all times.

Adult elephants are not captured for training. They are too excitable and dangerous and are nearly impossible to handle. Only the youngsters of but a few years of age are captured and subjected to discipline and training.

Historical Resume of Trained African Elephants

The training of African elephants can be traced at least as far back as the third century B.C. when soldiers of the Ptolemies of Egypt captured and trained African elephants near the Ethiopian shore of the Red Sea. These animals after having received their training were transported to Egypt on specially constructed boats.

During the Punic Wars the Carthagenians made use of a species of African elephant, now extinct, which lived in the Atlas Mountains. Some of the elephants used by Hannibal on his march thru the Alps came from the last named area.

More efficient military transport soon made the African elephant disappear from the battlefield and from the group of animals which assisted man in his work. Over two-thousand years went by before another recorded attempt to tame and train the African elephant comes to our attention. About the year 1880 a group of missionaries at Sante Anne-De-Fernard Vaz in the Gaboon succeeded in capturing and training a young elephant which undoubtedly was a representative of the forest species. The Negroes, living in that area, were amazed by the feat and it is said that they travelled considerable distances to see the tame elephant at the mission establishment.

In the year 1899, Jules Henri Laplume, an officer in the Belgian Army, went to the above mentioned mission station to observe the tame elephant perform various drayage tasks. During the same year a station for elephant training was established at the village of Api in the Belgian Congo with Laplume as its head.

King Leopold of Belgium sponsored the elephant training program and bore the entire expense of the undertaking. Leopold was very desirous of opening up the Congo to trade but had been largely frustrated in his efforts by a lack of transport. There were insufficient porters, and draft animals, such as oxen, died of sleeping sickness transmitted by the Tsetse fly. The possible use of African elephants (which are immune to sleeping sickness) was only too obvious. The success of the mission station made the scheme appear very hopeful.

It was not until 1901 that the station at Api succeeded in capturing some young elephants, three being taken that year. The number of animals at the station increased very slowly. However, by 1910, there were thirty-five trained at Api. They were used for carrying loads, drawing wagons, and field cultivation.

By 1925, the trained herd had increased in number to forty and had become an important economic factor in the production of cotton in the northeastern Belgian Congo. Several years of experimentation had shown the Belgians that cotton production in that part of the Congo was a sound economic possibility. As with many other attempts to exploit the area, the economic success of

cotton cultivation was at first hindered by a lack of transport. In the year 1922 the first major experiment with African elephant transport had been made. This was done on the route between Buta and Bambili. Elephants were harnessed to old auto chassis upon which had been piled an entire cotton factory. Ten elephants were used and the experiment had proved to be very successful. As a result, good rolling stock was purchased and a regular transport service consisting of twelve elephants and six cars was instituted between Tituli and Bambili. Each cart or wagon carried ten ton.

Elephants were also pressed into the work of cultivating the cotton fields. They were able to work in the rainy season when mud put a stop to tractor operation.

In 1926 another elephant training station was established, this one being located at Gangala-na-Bodio. This station is near the southern border of the great animal reserve called Gramba National Park. Elephants were, and are, quite numerous in the park area and thus furnished, close at hand, the necessary animals for the training station. By 1930 the new station possessed about forty trained elephants and the old station at Api possessed about thirty, some of which had been faithfully working for twenty years. For reasons of economy the station at Api was disbanded in the mid 1930's.

Gangala-na-Bodio has to this day continued as a station for the capture and training of young African elephants. However, a shadow has fallen across the usefulness of trained African elephants in this area. By 1947 the Belgian government had begun to wonder if the elephant was still effectively competing with tractors, trucks and other machines. In 1948 Dr. H. Hediger, an eminent European zoologist, was commissioned by the Belgian government to investigate and report on whether or not the trained elephants in the Belgian Congo were still economically useful.

Dr. Hediger reported in the negative and suggested that the training station be made into a field station for the study of the biology of the African elephant. A few years later Dr. Hediger restated his previous conclusions and pointed up some of the reasons for them. He said that the forest elephant, unlike his Asian relative, could no longer compete successfully with machines, because it had an abnormal digestive capacity with very poor assimilation. The forest elephant must consume so much bulky

and moisture containing food that it has little time left for work after feeding.

Acting upon this information, the station reduced its activities. However, in 1956, there were a reported 60 trained elephants at the station and these were performing a certain amount of work, but this work is no longer of any great economic significance. They are also the object of study by biologists. The long term future of elephant training in the Belgian Congo is somewhat doubtful. But, even if the station is given up at some future date, we should be mindful of its efforts, its period of success and the fact that it was demonstrated there that African elephants can be tamed and trained to do useful work for their human masters.

FINANCIAL AID FOR A GEOGRAPHIC EDUCATION

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Wellesley College

The demand continues for trained geographers whether for teaching or employment by government agencies and private firms. The cost of acquiring that training is still rising. How is the prospective geographer to finance his education if he must have aid in addition to the money he may be able to earn or his family provide?

Types of Aid

Fortunately aid in the form of scholarships, fellowships, or loans is available to students who qualify as recipients. Some funds are for undergraduates, others for graduate students, and many are open to both. Few, except at the graduate level, are designated "for geographers only," so the geographer must be prepared to meet competition from other academic fields. As the number of college students rises this competition will become increasingly severe.

Financial need has come to be the basic requirement for most scholarships and many fellowships. Once need has been established

awards are made on the basis of previous academic record plus personal qualifications. Candidates are judged on more than grades and a statement of good character. The most likely recipients are those who show evidence also of being "well-rounded" and "enterprising" persons.

In most instances the applications for scholarships exceed the funds available. At the same time students overlook the money available to them in the form of loans. Various organizations as well as the majority of United States colleges and universities have loan funds, and many find they have more available than is requested. This seems especially unfortunate because terms of repayment are normally very favorable. Interest rates are low, and payments, which do not start until after graduation, may be spread over a period of years. The prospective geographer who is serious in his desire for further training should not overlook the opportunity to acquire an education "on credit."

SOURCES OF AID

To whom does the geographer apply for aid? The possibilities are many and varied. The list is constantly being enlarged, altho some current funds may cease to exist in the future. Because scholarship and loan data change rapidly it is impossible to compile a complete list of all sources of aid. However, the following suggestions should be helpful to geographers whether at the undergraduate or graduate level.

For the Undergraduate

Colleges and Universities. All have scholarship funds available for distribution, and many have loan funds. In addition to general awards they may have special funds for children of ministers, teachers, etc., for students in certain fields of specialization, or for those from more distant regions. Consult the Director of Scholarships of the school of your choice.

Home Community. Scholarship and loan funds available to local residents vary among communities, but it is suggested the following be investigated:

Special Community Funds. Examples would be those handled by the Chicago Community Trust for worthy and needy male graduates of high schools in Cook County, Illinois; Edwards Schol-

arship Fund for legal residents of Boston; Cleveland Foundation; Indianapolis Federation.

Service Groups. Amity, Eagles, Exchange, Kiwanis, Lions, Rotary, Zonta, etc.

Local Parent-Teacher Associations.

Local Units of Patriotic Organizations. The American Legion, V.F.W., etc., are interested in the education of children of veterans, particularly of deceased or disabled veterans.

Local Branches of the American Association of University Women.

Local (and State Federations) Business Men's and Business Women's Clubs.

State or Regent Schoarships. Inquiries should be sent to the Department of Education of the home state.

Industrial and Business Firms. It was estimated in 1954 that more than three hundred companies were offering a total of two thousand fellowships, scholarships, and grants.[1] Most of these are limited to employees or children of employees who have been with the company for a specific number of years, but in some cases they are available to residents of certain regions. Among the better known are the college scholarships awarded by the Ford Motor Company in a nationwide competition among the children of employees. Among other well-known companies which provide aid are the Atlantic Refining Company, Carnation Company, American Can, and the Union Pacific Railway. The list is too long to cite more than a few.

Labor Unions. A variety of scholarships and loans are available to children, and in some cases to brothers and sisters, of members of some union locals.

National Fraternities and Sororities. Awards are usually, but not always, limited to members. The recipient must attend a college with a chapter.

General Federation of Women's Clubs (1734 N St., N.W., Washington, D.C.). This Federation has programs and projects in many fields including conservation.

Religious Educational Foundations. Consult your minister, rabbi, or priest as to scholarships and loans which may be available to you because of your religious affiliation.

[1] Benjamin Fine, *Fine's American College Counselor and Guide.* Prentice-Hall, Inc., New York, 1955, p. 32.

Foundations to Aid Racial or National Groups. These include the National Scholarship Service and Fund for Negro Students (31 W. 110th St., New York 26, N.Y.); National Association of Colored Women (1114 O St., Washington 5, D.C.); Masaryk Institute, Inc. (8 W. 40th St., New York 18, N.Y.) for students of Czechoslovakian descent; Portuguese-American Civic League of Massachusetts (31 Almy St., Fall River, Mass.) for students of Portuguese descent.

Miscellaneous Private Foundations. The list is long and varied as to qualifications of the candidates. It is suggested that the publications listed in the Bibliography be consulted for names, addresses, and requirements of specific foundations.

For the Graduate Student

As with undergraduate scholarships and loans, awards at the graduate level depend on the quality and promise of the individual applicant. Many of the sources of scholarships and loans listed above for undergraduates have funds also for the graduate student. The university of his choice will have general as well as departmental scholarships and fellowships. Additional organizations with funds are listed below. The prospective candidate should write for further information to those which seem to meet his need. Fellowships range from those for the student entering graduate school for the first time to those for postdoctoral study or research. It is suggested that geographers interested in foreign study consult the *Handbook on International Study* published annually by the Institute of International Education.

American Association of University Women, 1634 Eye St., N.W., Washington 6, D.C.

American Council of Learned Societies, 1219 16th St., N.W., Washington 6, D.C.

American-Scandinavian Foundation, 127 E. 73 St., New York 21, N.Y. For study in Denmark, Iceland, Norway, Sweden.

American Society of Women Geographers. A fellowship is being awarded for 1957-1958 through the University of Chicago.

Arctic Institute of North America, Broadway at 156th St., New York 32, N.Y. Research grants.

Belgian American Educational Foundation, Inc., 420 Lexington Ave., New York 17, N.Y. For study in Belgium or the Belgian Congo.

Canadian Federation of University Women, P.O. Box 428, Fredericton, New Brunswick. Travelling and professional fellowships for Canadian women.

Convention for the Promotion of Inter-American Cultural Relations (Buenos Aires Convention). For study in Latin American countries. If enrolled in a college or university apply to campus Fulbright Program Adviser. Otherwise to Institute of International Education, U.S. Student Dept., 1 E. 67th St., New York 21, N.Y.

Doherty Fellowship Committee, Woodrow Wilson School of Foreign Affairs, Princeton, N.J. In the field of social science. For graduate students requiring field work in Latin America for completion of their projects. Preference given for advance study in Chile.

Ford Foundation, Foreign Area Training Fellowships, 477 Madison Ave., New York 22, N.Y. Fellowships in the social sciences and humanities related to Asia, the Near East, the Soviet Union, Eastern Europe, Africa.

Fulbright Program. If enrolled in a college or university apply to campus Fulbright Program Adviser. Otherwise to Institute of International Education. For advanced research apply to Conference Board of Associated Research Councils, 2101 Constitution Ave., N.W., Washington 25, D.C.

Institute of International Education, 1 E. 67th St., New York 21, N.Y. Scholarships and fellowships are offered thru the Institute by foreign universities, cultural societies, and governments.

Junior Chamber International. Information may be obtained from local Jaycee chapters.

Middle East Institute, 1830 19th St., N.W., Washington 9, D.C.

National Association of College Women, Committee on Scholarships, Frances M. Eagleson, Chairman, North Carolina College, Durham, N.C. For graduate work beyond the master's degree in any field open to women.

National Science Foundation, National Research Council, 2101 Constitution Ave., N.W., Washington 25, D.C.

Population Council, Inc., 230 Park Ave., New York 17, N.Y. Fellowships for study on the relationship of the world's population to its material and cultural resources; for students in the social and natural sciences at the pre- and postdoctoral levels.

Rotary International. Fellowships for study in a country where there are Rotary Clubs. Candidate must be sponsored by his or her local Rotary Club.

Social Science Research Council, 726 Jackson Place, N.W., Washington 6, D.C. Candidate must have a Ph.D. or have completed studies for the degree.

For further information and suggestions the geographer should consult some of the books which discuss scholarships, fellowships, and loans in more detail.

CONCLUSION

The geographer is well aware that he must be prepared to meet competition as he seeks financial aid for further training. He knows that he will be judged not only on past and current scholastic achievement, but that he will be appraised also as to "future promise." However, the qualified student should not become discouraged at the prospect of the rising cost of his education, because, to quote Benjamin Fine, "In this country anyone who is qualified can go to college, to a university, to a professional school. It may be difficult. It may take hard work. But it can be done. Lack of money is an important barrier, but it is not a fatal one."[2]

[2] *Ibid.*, p. 36.

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THE VITAL ROLE AND SCOPE OF GEOGRAPHY*

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Today in too many spots there is geography haze in spite of the vital role of geography. Geography is usually defined as the science dealing with the earth and its life—but that gives too static an implication. Geography is a dynamic science dealing with the unique synthesis of the whole world in continuous evolution. A thoro and understanding knowledge of this science can inculcate a viewpoint of inestimable value in practical life—one viewpoint not given by any other area of the curriculum. A study of this unique synthesis of the earth in continuous evolution explores the relationships between the various factors concerned, how these factors affect each other and how all operating together make up the physical environment, and how they affect man, then in turn how he modifies this environment.

Geography sets the stage on which all life is enacted; history describes the drama of human life. Thus the close relationship that exists between them is shown. By searching into the past and by exploring the earth's surface, all life on the globe becomes more understandable and men can direct their lives more efficiently. Geography deals with rapidly developing and diverse societies in relation to an earth of which there is ever-expanding knowledge.

* Presented at the Atlantic City meeting of the National Council for Geographic Education, December, 1956.

The physical aspects are equally important because the synthesis of the two is essentially the core of geography, i.e., mankind must be given the evidence of his adjustment to natural and world relations. Geography is a most vital science to all mankind and is a vital area in the school curriculum for the following reasons:

1. To help students explore the location and character of the outstanding surface features of the earth in their relations to all life.
2. To show how men live, what they do, and why they live and work as they do.
3. To show the interdependence of man on his environment and the earth's natural resources and the economic interdependence of the peoples of different countries.
4. To appreciate the need of conservation of the soil, plant and animal life and all natural resources.
5. To gain a working technique of how to obtain geographic information thru interpreting maps, pictures, and graphic materials and other aids and research.
6. To organize and formulate geographic concepts according to acquired geographic principles and applying these geographic principles to interpret and understand current world affairs.
7. To acquire desirable attitudes and a sympathetic understanding of the conditions and peoples of other countries of the world, especially the eighty member nations of the UN.
8. To realize his role as a citizen of his own country and his role as a world citizen.
9. To develop clear thinking and sound reasoning thru the scientific method.

These nine attainments reveal, obviously, that a fundamental basic knowledge of World Geography is indispensable for international understanding or, as someone has expressed it, "Operation Geography, an aspect of Applied Geography."

In order to fulfill this vital role in modern society, geography should be found in the curriculum thruout the elementary and secondary schools as well as in required courses in college. Even the Adult School program should help meet this new and current demand for geography.

Much is said about this being the Air Age and the Atomic Age. Equally, so it is the Geographic Age. The earth, altho shrinking in distance concepts, is ever expanding in complexity and activity. Today's air traffic, world trade, distribution of natural resources, world travel, and the eighty member nations of the UN all demand a broader and more authentic understanding world geography to facilitate their efforts and achieve their goals.

To further aid the lifting of the present geography haze, there is a universally dire and pressing need among teachers in the public schools to improve the present day teaching methods of geography. Geography readiness, like science readiness and reading readiness should begin in the kindergarten. The teaching and pres-

entation should be more dynamic and realistic. For the most part, the present approach is static and still in the traditional stage. There should be a functional, creative approach for such a presentation has limitless potentialities because of the exploring, venturesome attack and intriguing laboratory procedure. The student, thru his repeated discoveries of similar geographic factors and their relationships, will formulate most of the basic geographic principles and acquire the technique of applying such geographic principles, so his background is built up of a continuity of relationships and interdependence and association. Of course, this requires the guidance of strong teachers. Yes, strong teachers who have rich, cultural backgrounds, who radiate enthusiam, and who have had thoro training and a well-grounded knowledge of geographical content.

Wherever possible today's geography teacher should employ the field trip to bring the students to the primary sources. The word-picture, for many children, gives too many erroneous concepts. They make their own deductions. A second grade child may decide that the moon is nearer his home than England because he can see the moon. The field trip may be the neighborhood brook or a nearby elevation, or bus ride, train, or ferryboat. If the field trip is impossible, the film and film strip can do much to give more accurate impressions of land forms and peoples of the world. Here, too, with the film the teacher needs to help and guide the acquiring of geographic concepts; always using the scientific method in guiding the students to their goals.

Finally, the teacher may augment her geography teaching by drawing on all related areas of the curriculum thru an experience unit. This is where the scope of geography is felt and realized. Social studies, as well as all other areas of the curriculum, can enrich and help expand and complete the continuity. Today, due to the time element and content volume, the curriculum in the elementary school has become a huge tapestry. Geography should be the warp in the weaving of this intriguing tapestry, but not lost in the scenes portrayed. In other words, geography should be correlated as well as all areas of the curriculum just as they are in living, but not submerged. This has happened in social studies—undue emphasis is being placed on history and losing sight of the real causes for many of the social phenomena.

During the last few days, would the Suez Canal be discussed without the relationship of its recent 87th anniversary and Verdi's

opera "Aida," also the significance of England and France, also the U.N. and possibly Panama Canal, and, finally, oil and the early trade routes?

Geography is vital and its scope cannot be divorced from the life of the world. In scope, may it be said, geography is like a huge octopus whose great tentacles stretch out into all areas of the curriculum equally important. First, there is science at every turn, then biology, anthropology, sociology, geology, astronomy, climatology, meterology, economics, agriculture, music, art, religion, literature, language arts, and mathematics. Some one may say: "That's a good burial job." If it is, the teacher is reposnsible.

Naturally, the teacher's guidance is governed by the time element, the level of student's ability, and interests. Truly, the scope of geography radiates in every direction. The experience unit can be as expansive as desired. However, the greater the expansion the more enrichment; providing the teacher watches the continuity and, as pilot, keeps the student's efforts on the beam. To be sure, there are many times when the content needs to be taught or worked out as pure geography before any other related area is introduced.

Important and essential as the change in method of presenting geography is, this is not enough to burn off the haze. Geography must be restored to its former seat in the curriculum and required of the student thruout his school life, including college. United public opinion and action are the only agents to accomplish this. May it be suggested that the National Council for Geographic Education thoroly plan and effectively organize a survey on all levels—elementary, secondary, and college as to where, when, and how much geography is taught and is required. Then give a valid test to these students to ascertain the current results. Armed with this evidence, the National Council could approach the problem.

These few remarks readily reveal that the vital role and scope of geography, with all its creative vigor, still flourishes beneath the haze, and eagerly invites the heat and energy of public opinion to burn off the haze. May the National Council furnish that dynamic heat and start burning off the haze, before the next annual convention, so that the true glory and romance of geography may be revealed in Stockholm in 1960.

EXPERIENCES WITH INTEGRATION IN THE JUNIOR HIGH SCHOOL*

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Prior to 1953, history and geography were taught as separate subjects in the junior high schools of Baltimore. A curriculum committee, composed of administrators and representatives of the supervisory staff, had been working for several years on a new organizational plan for the junior high schools. The recommendation of this committee, among many other recommendations in other fields, was that the existing separate history and geography programs of the seventh grade be combined into a "social studies" program. Our eighth grade geography program was to be extended from a half year to a full year. This eighth grade program of world geography was to prepare the students for the first year of world history offered in the ninth grade.

Those of us who had been teaching geography as a separate subject had a difficult adjustment to make. Instead of an organizational pattern of nine periods of history and geography at the seventh grade level, all seventh grade geography teachers were asked to experiment in a program combining the two subjects. Class periods, originally forty to forty-five minutes in length, were increased to fifty minutes.

The definition of social studies in Baltimore states: "The social studies constitute a field of study, a federation of subjects, particularly history, economics, political science, sociology, and geography." On the seventh grade level, the two subjects concerned are history and geography. As to the organization of the two subjects and the method of combining them, we first tried fusion, then alternating units of each subject. Now it looks as if we might revert to a semester each of history and geography. It is from my experience in the development of this program that my ideas on the subject have been formed.

It was hoped by the curriculum committee that by combining the two subjects, the seventh grade child would benefit by having one less teacher and one less subject, thus reducng the difficulty of adjustment to junior high school. This might well have been the case

* Presented at the Atlantic City meeting of the National Council of Geography Teachers, November, 1956.

had the original time allotment been retained, but the nine periods once given to history and geography were reduced to six and an additional subject added. Thus, in Baltimore at least, one possible advantage was not realized.

Because history and geography have an undeniable relationship, there is undoubtedly a maximum use of that relationship when both are taught by one teacher. Handled by a single person, geography can be used to explain history; and history used to provide the cultural heritage, which is one part of man's environment. This value, however, can be as effectively realized without any organic combination of the two subjects. In fact, unless the two are maintained as separate entities, there is a decided danger that one will overshadow the other. It is the unusual teacher who has equal interest in, and preparation for both subjects; and however sincere the effort, one subject will be emphasized to the detriment of the other. In terms of new teachers and by simple arithmetic, to be trained in two areas, argues less adequate training in either. In this case, both subjects suffer.

The most complete combination of the two subjects is by fusion. Having tried this for a year, my state of mind and that of my pupils could quickly be summarized by putting the preposition "*con*" in front of the word. There is a surface logic to the statement that the geography of a region can be learned along with its history. Here we come to the need to define geography. If geography is, as many believe, simply the locating of where historical events took place, there can be no objection to the above statement. By this definition of geography one can say: "Here is New England; down here flows the Connecticut River; to the north flows the St. Lawrence; and here sits Boston."; and one has taught the geography of New England. But if geography is man's relationship to his total environment, it cannot be adapted to an historical organization of subject matter. This misconception may well spring from the fact that the two exist together. History takes place in a geographic setting, is influenced by geographic factors, and is itself a part of the geographic picture. However, each has an entirely different pattern of thinking; and it is this ability to think historically, to think geographically, that is lost in fusion.

History is a time line; geography is spatial. There is a geography for any given point in history. If time permitted, it might be of value to teach historical geography; but when the pressure of

time forces a choice, it is certainly of first importance to devote that time to present day geography. May I illustrate that as it applies to our own country? Because our history conveniently moves westward, we erroneously assume that we can move along with it geographically, ignoring the fact that in so doing we are collecting a set of geographical pictures from different points in time. The seventh grade child thus sees New England as the Pilgrim Fathers saw it, the Middle Atlantic States during Revolutionary Times, the South during the Civil War, the Great Plains at the time of the Louisiana Purchase—need I go further? The result may be graphically represented as a kind of step geography. If, on the other hand, each region is brought up to date to show the industrial complexities of New England, the port development of the Middle Atlantic States, the changes wrought by TVA in the South, the cattle industry of the Great Plains, the history of the United States becomes segmented. In Baltimore, our history teachers felt that deviation from a set time sequence of events upset the chronological pattern needed for junior high school children, who are scholastically immature.

My next attempt to combine the two subjects was by a series of alternating units breaking up the history at convenient points to teach regional geography. The most obvious objection to this is the fact that once again the chronology of history is interrupted. However, the most disturbing result to me was the interruption to the development of a pattern of geographic thinking. The vocabulary and concepts of geography are new to a seventh grade child and difficult for him. He becomes acquainted with them in the first region studied, and repetition, region by region, establishes a pattern of thought applicable to any area. When this development is interrupted, much that has been learned is forgotten because the pattern has not become firmly established. The pupil needs a continuous study, region after region, in order to observe and learn some of the simpler generalizations such as: "areas surrounding large cities are usually devoted to truck farming," "a good harbor needs a hinterland to become a port," "in mountain areas one usually finds grazing, mining, or both."

There is, in addition to these basic weaknesses in social studies, the practical, if less important, consideration that social studies is a more expensive program. Since money for education is usually scarce, this may deserve some brief attention. Assuming that in a

given school, one has five geography and five history teachers; the combination of these two subjects requires that ten classrooms be equipped for both subjects instead of the original five each. This results in either a strain on the budget or in spreading more thinly the available materials. In Baltimore we have been fortunate to have well-equipped history rooms and geography rooms. The spread of these materials was difficult for teachers who are used to adequate materials in both areas.

I would be interested to know what has been done with integration on a higher level and with what results. I suspect that the most fruitful union of the social studies could be found on a college level, when students are well trained in each subject area and have, by virtue of college acceptance, the intelligence and maturity to achieve a meaningful integration. Realizing the weakness of analogy, let me use this one to illustrate the point. When a piano student is faced with a difficult passage, he first practices with his left hand and then with his right, and having achieved skill in both, puts the two together successfully. May I suggest that geography be considered the left hand, history the right hand? If played together too soon the result may be discord. When each is learned well, alone, together they may make beautiful music.

EXPERIENCE WITH INTEGRATION IN THE INTERMEDIATE GRADES*

MARGARET F. ABEL
Lanning School, Trenton, New Jersey

In analyzing this problem of integration of geographic thinking with historical thinking in the intermediate grades, it seems feasible to first determine when and how the intermediate grade child—this ten to twelve year-old child—learns the best. Is it under a formal, rigid time schedule in which the fourteen various subjects of the intermediate grades are taught in isolation, or is it under a relaxed, pleasant atmosphere in which a system of unification, correlation, and coordination is taking place? Under which system does the child learn the best?

* Presented at the Atlantic City meeting of the National Council of Geography Teachers, December, 1956.

Who is this intermediate grade child? What is he like? At this age level, no one group of children is more eager to learn. They are hungry for knowledge of the world, its people, and its inventions. They love to do projects. They like to be challenged. They like to please you, the teacher. They love to collect things and bring them to the classroom.

Evidence of these traits can be explained in many ways. Several weeks ago, I mentioned rather loosely that we would be studying rocks. The following day, at least forty-five rocks arrived of many diverse shapes and sizes. In our study of *power* just last week, it was announced by one of our student teachers that we would be studying the kinds of coal. In the course of two days, eighteen different samples of coal arrived, ranging from the common stove, pea, and nut coal to the less familiar varieties of cannel and lignite.

What do these illustrations prove? They prove the teacher's problem is not one of arousing or inciting motivation, but rather a problem of selection. Just what shall she teach first, or which child's materials shall she use! The alert teacher will, of course, know how to handle this problem and she will know also that children learn best when they are interested.

Interest, however, is not enough. It is merely the spark or beginning. If the spark is to grow, somehow or other, the child must be made to see that what he learns serves a purpose or fulfills a need in his life. So, it remains for the teacher to kindle that spark by feeding it properly with kindling materials.

What are these kindling materials?

At the intermediate level, these kindling materials in the Social Studies program take the form of the child's personal experiences, the teacher's experiences, the use of pictures, maps, stories, projects, and class trips. When to use each one depends primarily on the class's needs as diagnosed by the teacher.

Two years ago, I was privileged to have had in my class a girl who was fortunate in being able to take a Round the World Cruise, for three months, with her grandparents. I can't begin to enumerate the vicarious experiences enjoyed by the whole class from such an experience. Here was a definite tangible need for us to have a world map, and to keep it up-to-date with a running red ribbon at every port-of-call. Letters were received by the participant from

us and, in turn, we received letters from her. The letters frequently revealed strange customs that needed to be answerd by doing some reference reading. Needless to say, the geographical reasons far outweigh the historical reasons, but the presentation of both views made for a more satisfying conclusion. On her return, the information and souvenirs that were shared with us thru her first-hand experiences were, perhaps, the most valuable and long-lasting.

Here was concrete tangible evidence of a country's products. These products were *real* and the countries they came from *actually existed.* In short, the cities and countries we had listed on the map took on new meaning. Our single-purpose map which had depicted a route around the world, became a products map as well. Here again, the children could see the purposes for their learning.

It is interesting to cite here that many educators feel that children, at this age level, tend more to rote memorization of facts and do not engage in any deep reasoning. Going back for a brief moment to the trip, just mentioned—when the cruise reached India, our child traveler, who had beautiful, long, blond hair, was surrounded by the Indian people. They either stared at her, felt her clothes, or patted her hair. The reason for such interest was, as the steward of the ship related to the grandparents, the fact that these people of India had never seen an American child. Their concept of America was that it was inhabited by all old people. Contrary to the opinion that children do not reason well, this is a direct quote from one of my class. "I guess those people in India really changed their minds about us." Children can and do reason in a mature manner, and more so with proper guidance.

Recently, the study of the earth as a sphere and the definition of a hemisphere was explained to the class. The prefixes of semi, demi, and hemi, had been discussed as meaning half. Upon opening the social studies books, there appeared on four successive pages the Northern Hemisphere, the Southern Hemisphere, the Eastern Hemisphere, and the Western Hemisphere. Naturally, the teacher's question, previous to the opening of the books, had been "How many hemispheres are there?" As you might suspect, some deep thinking occurred.

According to the dictionary's definition, there must be two hemispheres, but the book showed four hemispheres. Finally, after analyzing the drawings, one child raised his hand and said, "Some of the same land is shown twice. There must be only two hemi-

spheres.'' Here again, is an example of good sound reasoning by the child to fulfill his need.

If the kindling materials, mentioned earlier, are to keep the fire burning brightly, somehow or other, the child must assimilate what he is learning into his patterns of thought. He must be able to see the information he has learned in relation to something else. He must be able to correlate it with other subjects and events.

The recent sinking of the *Andrea Doria* and the many written articles and television programs devoted to the sinking of the *Titanic* is an example of this correlation. Children are interested in these current topics. They have a purpose in reading them. And they associate their new learnings with their past learnings. So, we can safely say that one of the best proofs of actual growth is what the children notice and give thought to when they are on their own and preferably away from the classroom.

As a final thought, I rather like to compare this topic of integration versus isolated subjects with a beautiful painting. If an artist brings into play many beautiful colors, his vision is more vividly portrayed. Likewise, information from various fields on one subject create a more intense impression.

CONSERVATION IN NEW HAMPSHIRE*

Ella O. Keene,
Keene Teachers College, Keene, New Hampshire

As this member of the Conservation Committee of the National Council for Geographic Education looks at the program as developed in New Hampshire over the last ten years, it appears sporadic, uncoordinated and difficult to evaluate. However, the Conservation Education Association has evaluated the program and congratulated the committees in the state on their progress toward the ultimate goal of a well informed citizenry in matters concerning the wise use of natural resources.

* Presented at the Atlantic City meeting of the National Council of Geography Teachers, November, 1956.

Early Efforts in Resource—Use Education

For many years the Society for the Protection of New Hampshire Forests has sponsored at Spruce Pond Camp (near Allentown) a one week course for high school students. The instructors in the camp are from the fields of wild life, soil conservation, water resources and forestry. The young people are sponsored by various community organizations. The camp is co-educational. Young people who show unusual promise may return to the camp a second year to participate in an advanced program.

At the close of the Spruce Pond Camp, the whole staff moves to the Lost River Reservation (near Woodstock) to conduct a similar course for teachers. The teachers too, are sponsored by community organizations or by their supervisory unions. The teachers colleges grant one semester hour credit for this course. An additional credit may be obtained by attending the camp a second year.

Impetus from Community Studies Course

While these two camps were the initial effort, the real impetus to resource-use education was the intersession course offered by Columbia University under the direction of Dr. Hubert Evans entitled Community Studies. The facilities of Plymouth Teachers College (Plymouth) were used for four weeks. Supervisory unions in New Hampshire made this course available to their teachers thru either full or partial subsidy.

Plymouth is nearly the geographic center of the state, in a region vitally concerned with the tourist business. Any community study in such a region must examine in detail the resource use of the region.

The philosophy of resource-use education in New Hampshire, is committed to the principle that the work should be integrated into existing courses in the curriculum. At no time should resource-use education become a separate course.

The Education Technician for the State Department of Fish and Game devoted special attention to the New Hampshire teachers participating in the Community Studies course, helping them to develop methods of integrating the materials into existing courses.

Application and Evaluation of Methods

On their return to their communities from the Plymouth session, the teachers became the nucleus for committees to make the basic philosophy operate efficiently in their schools.

Especially commendable work has been done in such communities as Beebe, Tamworth, Stratford and Plymouth. Plymouth High School has had a committee operating for several years. Classes in physics investigated power resources to include steam, electricity and water power with emphasis on conditions which create abundance. General Science classes were concerned with water pollution and stream improvement. Economics classes were concerned with problems of labor supply. English teachers devoted some of their time to helping students with written and oral reports to be presented to the public thru the press and reports to lay groups. The school library devoted most of its budget to books on resource use.

In evaluating the program, they feel that the level of general education has been raised. Pupils like the integration of resource-use education into the existing subject matter fields for it relates their study to familiar elements in their environment. Parents are pleased with the direct application of learning to the real business of making a living. Teachers have come to appreciate the motivating force of resource-use education as a teaching medium.

Other Efforts Within the State

At Peterborough, in the southwestern corner of the state, Boston University maintains Sargent Camp. Under the direction of Leslie Clark, the camp is maintained as a year round laboratory for out-door education. Whole classes, grades 5 thru 12, move to the camp for one week. The pupils are accompanied by their regular class teachers. The children are given experiences in mapping, in the study of vegetation and wild life and obtain some insight into the ecology of the region. The camp has a long waiting list. The weeks most in demand are those when maple syrup is being made. Student teachers from Keene Teachers College may participate in the program for one week periods. In October 1956, a regional workshop for leadership training in conservation and out-door education was conducted here for adult leaders from northeastern United States.

Teacher Education and In-Service Training

Some work in resource-use education is being done at the two teachers colleges. At Plymouth Teachers College, under the direction of Robert Boyd (science) a course is offered on alternate years entitled New Hampshire Resources. Class periods are scheduled

to allow five to six hours in a block which give time for adequate field work.

Keene Teachers College offers a course with a similar title. The basic philosophy at the inception of this course was for social science background and it has been difficult to change. Keene Teachers College is definitely urban in character, and because many of the students work part time, it has not been possible to allow adequate time for field work. However, any course with such a title must examine the resources of a given community and some first hand experiences are given thru industrial interviews and by the use of resource persons as consultants.

Both institutions use a resource-use approach in many of their classes especially geography, economics and methods of teaching social science.

The State Department of Education allows released school time for three day workshops for teachers. The theme of the workshops is selected by the teachers themselves and Resource-Use Education has had wide popularity. Over the last five years, twenty or more such workshops have been conducted with interested persons from the teachers colleges as consultants.

The State Department of Education has developed and published guides for Resource-Use Education at both the elementary and secondary levels. These are both in the hands of the teachers in the field.

Summary and Conclusion

If one were asked why New Hampshire has developed this field, the following are suggestive:

1. New Hampshire is a small state with limited resources. We must make the most of the assets which we have.
2. The movement has been initiated by a few far sighted individuals who feel deep concern for the economic welfare of of the state.
3. While the population is predominantly urban, there are only 11 cities of over 10,000 population. This means that a large portion of the population lives in small communities. They are interested in wise forest management, in fishing and hunting in the tourist business and in other outdoor activities.
4. The newly organized Water Shed Councils are engaged in

examining the resources within their respective water sheds and, as individuals, are concerned with seeing the philosophy incorporated into the education of the youth.

If one were asked what the state most needs in the field of Resource-Use Education, we probably need at some level, possibly in the Department of Education, a person employed to coordinate all these activities that the movement be less sporadic and more easily evaluated.

THE NATIONAL COUNCIL AT WORK

The Constitution of the NCGE lists the following as duties of the State Coordinators:

Keep in touch with state educational plans and programs; assist those persons interested in the improvement of geographic teaching; watch for occasions upon which action might be taken to promote the standards of geography teacher-training and certification at both the elementary and secondary levels.

Publicize, within the state, the annual meeting of the National Council, and any National Council awards and honors received by citizens of the State.

Report annually to the Director of State Coordinators.

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EDITORIAL NOTES AND NEWS

ALBERT J. NYSTROM, founder of A. J. Nystrom and Company, passed away recently at his home at Ft. Lauderdale, Florida. Mr. Nystrom for many years was a devoted friend of the National Council for Geographic Education. It was in 1920 when Mr. Nystrom began his personal cooperation with the National Council as publisher of the JOURNAL OF GEOGRAPHY. He never lost interest and that continued interest and support has been maintained by the Company which he founded. As a tribute to his memory the present directors of the A. J. Nystrom & Company have established a scholarship to be known as "The A. J. Nystrom Memorial Scholarship for Advanced Study in the Teaching of Geography." The candidate for the scholarship will be selected, and the award made by the Association of American Geographers.

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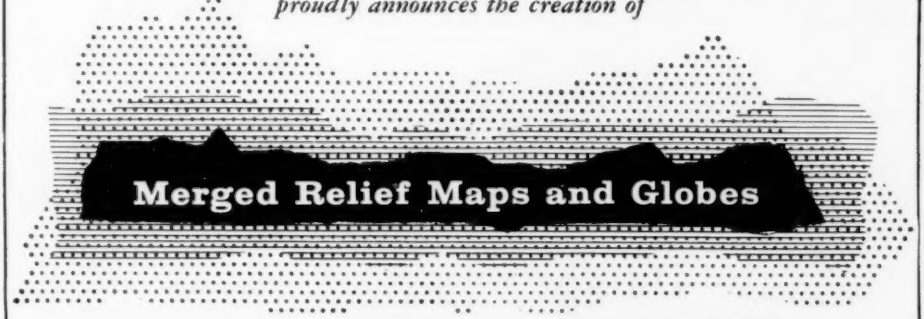

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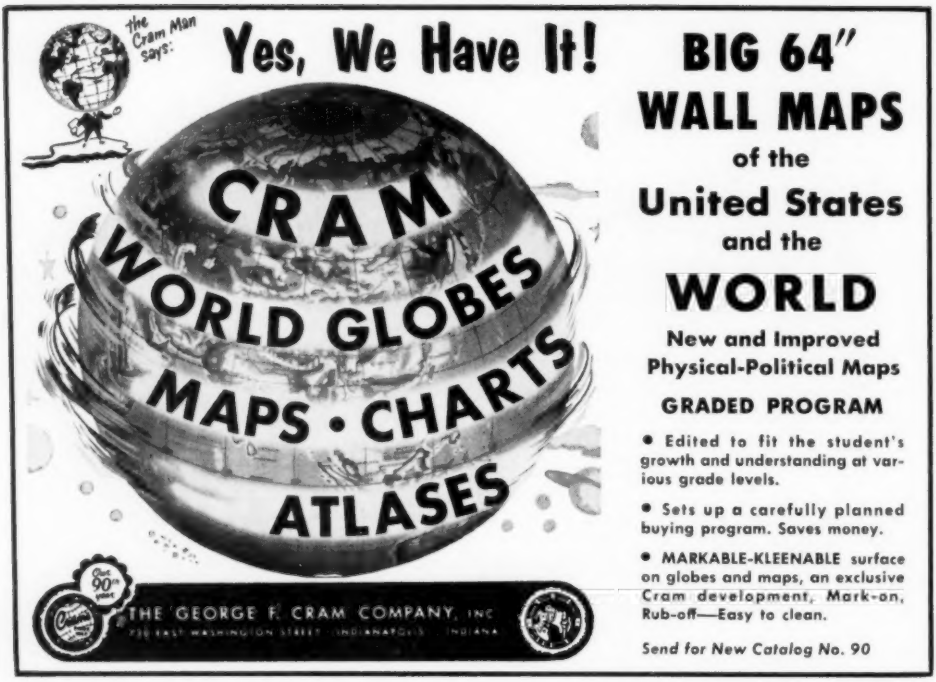
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EDITORIAL NOTES AND NEWS

About three-fourths of our export coal goes to Western Europe. Most of it is purchased by Great Britain, Italy, West Germany, Netherlands, Belgium, France, and Austria. Inability of many European countries to meet their power needs has stimulated development of atomic power plants.

Have you seen the thirty-one page Bulletin of the Illinois Geographical Society? It carries three major articles which deal with The Illinois Waterway, Coal Mining in Christian County, and The Chicago Vegetable Producing Area. The Society Secretary is Clarence W. Sorensen, Normal, Illinois.

Students and teachers interested in the geography of Turkey will find some valuable material in the *Review* published by the Geographical Institute of the University of Istanbul. Number 3 of the 1956 international edition carries three articles entitled: Dry Months and Dry Seasons in Turkey, Study of Droughts in Turkey by Statistical Methods, and Some Observations Concerning Dry Farming in Arid Regions of Turkey.

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EDITORIAL NOTES AND NEWS

Have your students become acquainted with the new independent nation—Ghana? Ghana includes the Gold Coast and the British Trusteeship Togoland, and is about the size of Indiana and Illinois combined. The name comes from a legendary Negro kingdom. The population is approximately 5,000,000. Its resources include forests, bauxite, cocoa, rubber, palm oil, gold, diamonds, and manganese. Cocoa is the chief export, and earner of dollars for exchange. Due to low prices on the world market, it is said that the new crop will be sold at a heavy loss. Producers receive a guaranteed price. Ambitions include water power development, railroads, and production of aluminum. This will require a very large amount of foreign capital. No one, with the possible exception of USSR, appears to be interested in such an investment. What is the future of Ghana?

Credit for being the first in Texas goes to the *Junior Geography Club* of the Weatherford Junior High School. The club is sponsored by Beulah Caraway, the able, and energetic president of the Texas Council of Geography Teachers. The JOURNAL extends its congratulations.

Proved crude oil reserves of the United States January 1, 1956 were 30,012,000,000 barrels, and January 1, 1957, 30,434,000,000. Texas, California, Louisiana, and Oklahoma lead in estimated reserves. The reserves of 16 states declined.

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